

## FIELD OF THE INVENTION

The present invention relates to a tool handle and more precisely to an improved handle having a gripping hole for the thumb. The handle is suitable for tools like trowels and similar, and allows a better grip of the tool during work.

## STATE OF THE ART

Conventional handles for various tools are known since a long time. The known handles have no holes for the fingers of the hand, but are enclosed by the hand. Sometimes the index finger, and possibly the middle finger, is extended forwards for applying pressure onto the tool further forward, towards the working portion of the tool. The extended fingers are used more for controlling and applying pressure to the tool than for holding it fixed in the hand. This is not ideal for all tools.

There are also "handles" consisting of only a hole for the thumb, e.g. on a palette. A palette is however not used like a tool in the conventional sense, but should rather to be compared to a tray.

The present invention provides an improved handle compared to the previously known art. By providing a gripping hole for the thumb in the handle, the ergonomics is improved and the handle may be held in a more stable manner whilst simultaneously allowing a more comfortable, natural angle of the wrist.

## SUMMARY OF THE INVENTION

The present invention thus provides a tool handle. The tool has a working portion connected to the handle.

According to the invention, the handle is provided with a gripping hole for the thumb. Preferably, the gripping hole is located in such a way that the other fingers of the hand will apply pressure on the tool relatively close to the working portion. The handle may also be provided with a removable plug, intended for placing in the gripping hole so as to give the handle a conventional, solid embodiment.

The invention and preferred embodiments thereof are defined in the appended claims.

## BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be described in detail below, with reference to the enclosed drawings, wherein:

Fig. 1 is a perspective view of a trowel according to the present invention, being held by a hand,

Fig. 2 is a perspective view of a trowel provided with a plug according to the pre-

sent invention,

Fig. 3 is a perspective view from one direction of a plug according to one embodiment of the invention,

Fig. 4 is a perspective view of the plug of Fig. 3, from the other direction,

Fig. 5 is a perspective view from one direction of a plug according to another embodiment of the invention, and

Fig. 6 is a perspective view of the plug of Fig. 5, from the other direction.

#### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The invention thus relates to an ergonomically improved tool handle. The tool is illustrated here as a broad spatula or trowel, but the handle can also be used with other tools like grinding tools, brushes and the like.

As can be seen in Fig. 1, the exterior contour of the trowel resembles that of a conventional trowel having a handle 1 and a working portion 2 consisting of a metal sheet and the handle mounting. As is also previously known, the handle is not located at right angles to the working portion, but is here somewhat angled.

The novelty of the invention is, that the handle is arranged on the one hand for allowing it to be held enclosed by the hand, and on the other for allowing it to be held with the thumb only, by being provided with a gripping hole 3, intended for the thumb. The thumb of the hand is inserted through the hole in such a manner that the first joint of the thumb is pressing towards the handle, and the inside of the thumb is pressing against the forward, inner portion of the gripping hole 3. The rearward, inner portion of the gripping hole 3 simultaneously contacts the outside of the hand and the thumb. The other fingers are pressing with their tips onto the other side of the tool (the rear side in the figure). The pressure areas of the other fingers are marked by dashed ovals 4. As can be seen, the gripping hole 3 is oblong, allowing space for the thumb to be directed substantially forward along the handle, at a relatively small angle thereto. The entire hand is held rather extended, with all the fingers, including the thumb, only slightly bent. Also the wrist has a straight basic position, but will of course bend back and forth as necessary during work.

It may be seen that the tool, thanks to the gripping hole 3, will be very comfortable to hold. The pressure points will be distributed over the tool in an advantageous manner. It is easy to spread out and pull together the pressure areas 4 by spreading and drawing together the fingers, respectively, somewhat. The pressure areas 4 will always be distributed over a large portion of the width of the working portion 2 and all the fingers are utilised, making it easy to apply a strong pressure e.g. during filling and other types of work where sweeping motions are used. Thanks to the gripping hole 3, no fingers are needed for gripping around the handle, as was

the case with the known art. The new handle makes better use of the construction of the human hand, with the thumb directed towards the other fingers.

Preferably, the gripping hole 3 has rounded inner edges against the thumb in order to feel comfortable. A suitable size of the hole might be about  $3 \times 4$  cm, the hole thus being larger in the longitudinal direction of the handle. The gripping hole 3 should be located at an adapted distance from the working portion, such that the other fingers will apply pressure rather close to the working portion. Thereby, an optimum pressure and control of the tool is obtained.

For certain types of work, holding the tool like a conventional handle may however be more comfortable. In a preferred embodiment of the invention, the gripping hole 3 can thus be filled out by a plug 5. Fig. 2 shows a trowel having a plug 5 inserted. The plug 5 fills out the handle, making the pressure area inside the hand larger.

Figs. 3 and 4 show a first embodiment of the plug. As shown, the plug may be split. The plug consists of two halves 11 being connected to each other by means of a coupling. The coupling comprises a pin 9, affixed to or being part of one half, and extending into a through hole 10 in the other half. The plug is fitted by placing the halves, one from each direction, into the gripping hole 3, and inserting the pin 9 into the hole 10. The plug is held together by the friction between the pin and the hole. The plug has a cup-shaped peripheral edge 8 in order to smoothly follow the inner edge of the gripping hole 3. To remove the plug, one pushes on the pin 9 with a pointed object through the hole 10, making the halves 11 begin to part. Then the halves are easily pulled away from each other. Other types of couplings, e.g. Velcro straps, are conceivable. The above plug does not have to be elastic, but may be manufactured from a harder material, such as plastic.

Figs. 5 and 6 illustrate a second embodiment of the plug. The plug 5 is made in one piece and preferably made of rubber or some other elastic material. The plug also has a cup-shaped peripheral edge 6 in order to smoothly follow the inner edge of the gripping hole 3. The plug 5 is easy to fit by hand and can be removed with some pointed object, e.g. a screwdriver.

As is shown in the figures, the handle also has a suspension hole 7, as is conventional. The suspension hole 7 constitutes no part of the present invention and can also be omitted.

It will be understood that the handle according to the invention can also be used with other tools, such as brushes, paintbrushes, grinding tools etc. The angle of the handle relative to the working portion may of course also be varied depending on the use of the tool. The protective scope of the invention is solely limited by the following claims.